

In addition to the fungi listed above, Dr. Sprague's 1952 collections include the following Discomycetes not previously reported from Alaska: *Ascobolus glaber* Pers. ex Fr. on grizzly-bear dung, *Belonioscypha campanula* (Fr.) Rehm on *Hordeum*, *Dasyscypha calyculiformis* (Schum. ex Fr.) Sacc. on *Salix*, *D. leucophaea* (Pers. ex Weinm.) Mass. on *Lupinus nootkatensis*, *D. virginea* (Batsch ex Fr.) Fekl. on *Populus trichocarpa* and *Salix alaxensis*, *Helotium caudatum* (Karst.) Vel. on *Alnus*, *H. cyathoideum* (Bull. ex Fr.) Karst. on *Equisetum virgatum*, *Epilobium latifolium*, and *Bosnickia*, *H. leucellum* Karst. on *Alnus*, *H. scutula* (Pers. ex Fr.) Karst. on *Dryas*

*drummondii* and *Epilobium*, *H. virgultorum* (Vahl ex Fr.) Fr. on *Alnus* and *Sambucus*, *Humaria hemisphaerica* (Wigg. ex Fr.) Fekl., *H. umbrorum* (Fr.) Fekl., *Lamprospora amethystina* (Quél.) Seaver, *L. constellatio* (Berk. & Br.) Seaver, and *Mollisia uda* (Pers. ex Fr.) Gill. on *Alnus*, *Otidea auricula* (Cke.) Rehm, *Pyrenopeziza karstenii* Sacc. on *Agropyron trachycaulum* and *Poa*, *Rutstroemia nervisequia* (Schroet.) W. L. White on *Alnus*, *Stannaria persoonii* (Moug. ap. Pers. ex Fr.) Fekl. on *Equisetum*, and *Tapesia fusca* (Pers. ex Fr.) Fekl. on *Alnus*, *Salix*, and *Shepherdia*.

ZOOLOGY.—*Description of Eocycticus concavus* (Mackin) with a review of other North American species of the genus (Crustacea: Conchostraca). N. T. MATTOX, University of Southern California.<sup>1</sup> (Communicated by F. A. Chace, Jr.)

In a key to the phyllopods of Oklahoma and neighboring states, Mackin (1939) listed a previously undescribed species under the name *Estheria concava*. As a result of personal communications Dr. Mackin informed me that the original four specimens, on which the key characters were based, had been lost. However, another collection from the same locality contained eight specimens which Dr. Mackin kindly presented to me for study. Careful examination of these specimens resulted in the unquestionable decision that the species should be assigned to the genus *Eocycticus* Daday, 1915. I was then asked by Dr. Mackin to make a complete description of this unusual and interesting conchostracan.

Meanwhile there appeared in the key to the North American phyllopods by Pennak (1953) a listing of a species, presumably the species here under consideration, indicated as *Eocycticus concava* Mattox. The original designation by Mackin must be recognized even though it was based on the following incomplete diagnosis: "Rostrum shaped like a hatchet blade; with a row of large smooth spines along the mid-dorsal line, one spine for each trunk segment; hand of the male deeply incised at the base of the thumb; shell sway-backed." The diagnosis given by Pennak was: "Rostrum like hatchet blade;

with large, smooth spine on the middorsal line of most trunk segments; rare, poorly known; Okla." The specific name must be that of Mackin even though the generic designation is invalid. *Estheria* Ruppell 1837 as used for the Conchostraca is a homonym, as the name *Estheria* was first used for a genus of Diptera by Robineau-Desvoidy in 1830. The name *Estheria*, for conchostracans, is replaced by *Cyzicus* Audouin, *Eocycticus* Daday, *Caenestheria* Daday, *Caenestheriella* Daday, *Leptestheria* Sars, *Eoleptestheria* Daday, *Leptestheriella* Daday and *Cyclestheria* Sars. The original trivial name of the species under consideration, must be changed to agree with that of the genus, hence the name *Eocycticus concavus* (Mackin, 1939) is here given. Since the species has not previously been completely described a description is here presented and a neotype is designated. These animals were collected on August 12, 1928, in a temporary pool near Summerfield, Tex.

#### *Eocycticus concavus* (Mackin)

*Description*.—Male: The shell is elliptical with a straight dorsal hinge line extending two-thirds the shell length, and with a rounded ventral margin (Fig. 1, a). Posterior to the hinge the dorsal edge is straight extending ventrally at approximately a 20° angle. The anterior shell margin is rounded, extending ventrally very abruptly; the posterior portion is more attenuated. The greatest height of the shell is slightly

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anterior to the middle. The umbone is very conspicuous extending dorsally above the hinge line and located approximately one-fifth the shell length from the anterior edge. The anterior slope of the umbone extends abruptly ventrad, the posterior slope is more gradual. The form of the umbone gives a "sway-backed" appearance to

the shell. The lines of growth on the six male shells in the collection varied in number from 18 to 22. The average shell size was 6.9 by 4.2 mm, a shell width-length ratio of 1:1.6.

The head of the male possesses the characters typical of the genus as established by Daday (1915). Those characters are the roundly ex-

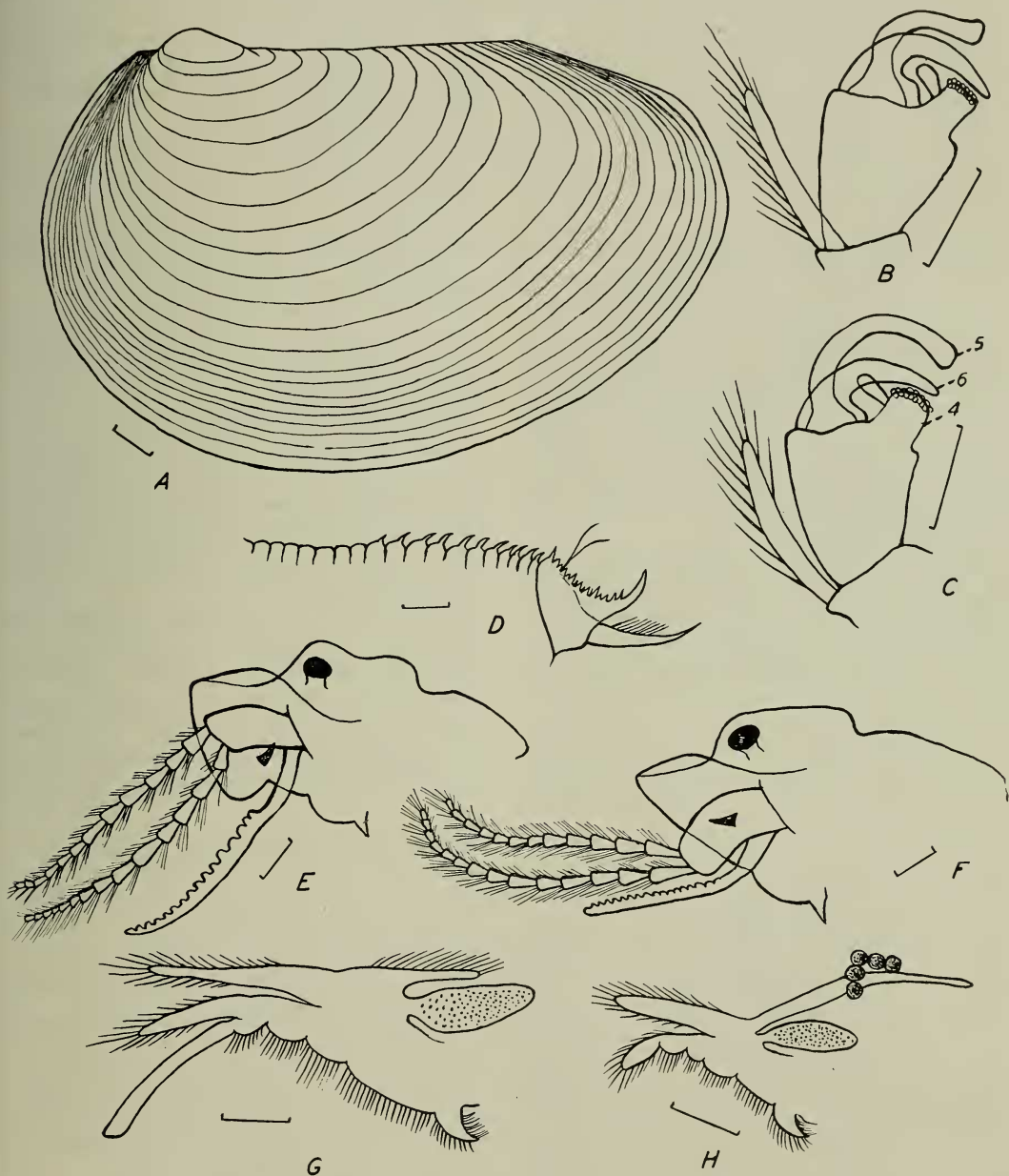


FIG. 1.—*Eocyclus concavus* (Mackin): a, Shell of male; b, first gnathopod of male; c, second gnathopod of male (4, 5, 6—fourth, fifth, sixth endite); d, lateral view of dorsal portion of trunk and the telson; e, lateral view of head of male; f, lateral view of head of female; g, male third appendage; h, female ninth appendage with eggs attached to epipodite. Scales all equal 0.5 mm.

tended and shallowly notched occipital region, also the broadly spatulate rostrum when viewed in profile (Fig. 1, *e*). The dorsal surface of the front is slightly concave. The anterior flagellum of the second antennae is composed of 12 segments, the posterior flagellum of 14 segments. The first antennae are elongate, dorsally papillose, up to 20 papillae, and extend to the seventh segment of the second antennae.

The body, or trunk, is composed of 19 segments each bearing a pair of appendages. The posterior 11 segments bear a middorsal, smooth spine; the anterior 8 segments bear no spines (Fig. 1, *d*). The first two pairs of appendages are developed into gnathopods, typical of the group. The palpiform "thumb" of the fourth endite of the first pair of gnathopods is notched at its base (Fig. 1, *b*). The digitiform fifth endite is shorter than the sickle-shaped sixth endite. On the second gnathopod the notch at the base of the thumb is not as pronounced as in the first (Fig. 1, *c*). The fifth endite is approximately one-third longer than the sixth. The third pair of appendages is foliaceous, as are all the others. The fifth endite of the third appendages possesses a digitiform extension approximately twice the length of the sixth endite (Fig. 1, *g*).

The telson is truncate, shortened, with a pair of ventral, curved cercopods extending posteriorly beyond the dorsal telson spines (Fig. 1, *d*). The telson dorsal ridges possess 16 or 17 spines of variable length. The dorsal forked filament arises between the third and fourth telson spines.

Female: The shell of the female is similar in form to that of the male; no marked dimorphism

is evident. On the two female shells in the collection each contained 22 growth lines.

The head of the female has the form characteristic of the genus. The rostrum, in profile, is acuminate; the occipital area is rounded and with a shallow notch (Fig. 1, *f*). The front is straight, not concave as in the male. The second antennae are as in the male, the flagellae are 12 and 14 segmented. The first antennae are shorter than in the male extending only to the fourth segment of the second antennae and possess 15 to 18 dorsal sensory papillae.

The body appendages, 19 pairs, are all similar in form, the typical foliaceous swimming legs. The ninth and tenth pairs have the epipodite elongated for the ovigerous function. The epipodite of pair nine is approximately one third longer than that of pair ten (Fig. 1, *h*).

The last 9 segments of the body possess a middorsal spine, the anterior 10 segments are smooth. The telson is similar to that of the male with 16 pairs of dorsal spines.

*Type locality*.—Summerfield, Texas.

*Type*.—Deposited in the U. S. National Museum. Neotype, male, U.S.N.M. no. 95731. As the original specimens of Mackin were lost it is necessary to designate the type as a neotype. One male and one female U.S.N.M. no. 95732, also deposited.

*Remarks*.—*Eocycticus concavus* represents the third species of the genus to be described from this continent. *E. digueti* (Richards, 1895) was described from Purissima, Calif., and *E. vanhoeffeni* Daday, 1915, was described from Mexico, the exact locality being uncertain. In the absence of specimens for direct examination the descrip-

	<i>E. digueti</i>	<i>E. vanhoeffeni</i>	<i>E. concavus</i>
SHELL	8.5 × 3.5 mm. 1:2.4 shell size ratio 14-16 growth lines	8.6 × 4.8 mm. 1:1.8 ratio 26 growth lines	6.9 × 4.2 mm. 1:1.6 ratio 18-22 growth lines
HEAD	Male and female similar Female rostrum elongate and sharply acuminate Occipital notch of female deeper than in male Second antennae flagella 12-13 segments	Male shell more rounded dorsally Female rostrum short, roundly acuminate Occipital notch of male deeper than in female Second antennae flagella 14-16 segments	Similar in two sexes Female rostrum regularly acuminate Occipital notch of two sexes equal Second antennae flagella 12-14 segments
TRUNK	First antennae with 13-18 papillae 16 segments 14 posterior segments with dorsal spine Telson with 12-15 pairs of spines	First antennae with 14 papillae 16 segments 14 posterior segments with dorsal spine 15 pairs of telson spines	First antennae with 15-20 papillae 19 segments 9-11 posterior segments with dorsal spine 16-17 pairs of telson spines
APPENDAGES	Male "thumb" of gnathopod cleft deeply Tenth epipodite of female twice length of ninth	Male "thumb" with deep basal cleft Ninth epipodite of female twice length of tenth	Male "thumb" with shallow cleft Ninth epipodite of female one-third longer than tenth



tion given by Daday for *vanhöffeni* has been used as a basis of comparison. The comparison with *digueti* has been facilitated by a recent acquisition of a collection of 3 males and 1 female from near Reno, Nev. This represents a new locality record for this species as it had been previously known from only the type locality. In addition to the characters indicated in the foregoing table, *concausus* differs from *digueti* in a number of other features. The hinge line is proportionately much shorter, the umbones are less prominent in *digueti*, and it does not have the "sway-back" appearance of *concausus*. In *digueti* the first antennae of the male extend only to the fifth or sixth segment

of the second antennae; the telson is more truncate, and the cercopods are proportionately shorter than in *concausus*. Also, the "thumb" of the male gnathopods of *digueti* are much more deeply cleft at the base than in *concausus*. A tabulated comparison of the three species is given on the opposite page.

## REFERENCES

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ZOOLOGY.—*Further studies on American millipeds of the family Euryuridae (Polydesmida)*. RICHARD L. HOFFMAN, Clifton Forge, Va.

My previous paper dealing with the American euryurids (1951) endeavored to provide a summary of the genera recognized by me at the time of its writing in early 1950. Since that time I have accumulated additional pertinent information and have come to realize that my reliance upon Attems's treatment of the group in *Das Tierreich* (1938) was in many instances ill-advised. In all, so many changes are necessary in the arrangement of the genera of this family that a second paper becomes advisable. While aware of the limitations imposed by the acute lack of critical study material, I am nonetheless convinced that even preliminary attempts at synthesis are badly needed at present. Half a loaf is better than none at all.

In the light of the preceding comments it may seem improper to refer to the works of the late Carl Attems in any vein other than one of utmost respect. Attems was the only recent worker with the industry and ability to produce manuals of the scope of his 3-volume "Polydesmoidea," yet while this magnificent compilation stands as a memorial to its gifted author, its minor imperfections will long be the despair of the uncritical user. Outstanding are Attems's disregard of the works of some of his colleagues (notably Cook and Silvestri), and a most remarkable indifference to the principles of type fixation. Some of these idiosyncrasies will be noted further on in the text.

Aside from information gathered from the literature, I have based this paper to a considerable extent upon Central American specimens preserved in my personal collection and that of the United States National Museum. This study material is very uneven as regards the genera represented. In the case of *Pseudamplinus*, I have adequate material to justify the preparation of a generic revision, which is now in progress. There seems to be no advantage in delaying the descriptions of the various new forms in other genera, however; these are given herewith, with at least a modicum of attention to their relationships to established species. In general the present paper is concerned with changes and additions on a generic level. It is assumed that the reader has access to the earlier paper mentioned above, which lists the species in the various genera not dealt with here.

It is with pleasure that I must again mention my increasing indebtedness to Dr. E. A. Chapin, for access to the collections of the National Museum and for much advice and information pertinent to the completion of the present study. I am also grateful to Dr. W. J. Gertsch, through whose cooperation I was able to examine material in the collection of the American Museum of Natural History.

## Family EURYURIDAE Pocock

- Trachelorhacidae Silvestri, Boll. Mus. Torino 13 (324): 5. 1898 (based upon *Trachelorhacis* Silvestri, a preoccupied name).